LMW156 SERIES LCD MONITOR

USER MANUAL

PRODUCT INFORMATION

MODEL: LMW156 SERIES LCD MONITOR
Version: V030000
Release Date: 2011-4-30

COMPANY NAME

OSEE Americas, Ltd.

CONTACT INFORMATION

43218 Christy Street
Fremont, CA 94538
Toll Free 866-625-6106
Tel. 510-996-4499
Fax 510-996-4492
Email: info@oseeamericas.com
Web: www.oseeamericas.com

About The USER MANUAL

The user manual applies to the following device types:

- LMW156H
- LMW156S
- LMW156V

The images of LMW156H are adopted in the following descriptions. Any of the different specifications between the device types are elaborated. Before reading the manual, please confirm the device type.

Note: These products are the commercial equipments and are not recommended being used in the household environment.

Contents

Chapter 1 Product Overview 1

Chapter 2 Unpacking and Installation 1

Chapter 3 Dimensions 2

Chapter 4 Operation 4

- **4.1 Status Display** 4
- **4.2 Input Signals** 4
- **4.3 Rear Panel Terminals** 5
- **4.4 Location and Function of Control Buttons And Knobs On Front Panel** 9
- **4.5 Input Signals and Adjustable/setting Items** 12

Chapter 5 Menu Operation Guide 13

- **5.1 Selecting the Menu Language** 13
- **5.2 Using the Menu** 14

Chapter 6 LMW156 Series LCD Monitor Menu Structure 15

- **6.1 Main Menu** 15
- **6.2 Adjusting and Changing the Settings** 15

Chapter 7 Technical Specifications 28

- **7.1 Product Detailed Information:** 28
- **7.2 Inputs** 28
- **7.3 Component Level Definition** 28
- **7.4 Standard Definition Video, Frame Refresh Rate and Color Matrix (1920×1080)** 29

Chapter 8 Supplied Accessories 31

Chapter 1 Product Overview

The LM156 is a cost-effective 15.6-inch LCD monitor that can be used for post production rooms, broadcasters and mobile units, monitoring multi-format high definition video and audio.

The LM156 is equipped with 1920×1080 high resolution panel and capable of displaying 1080 format high definition signal at native resolution. Advanced digital video processing technology such as precise 3D de-interlace, scaling, Gamma and color correction is used to ensure high display quality.

The LM156H can accept Video, S-video, component, SDI and HDMI format SD/HD video signal as well as VGA or DVI PC signal.

It has various On-Screen Display feature, can display16 channels audio meter, time code, UMD and tally on the LCD panel. Other features like H/V delay, NATIVE, blue/mono display, area marker and safety marker are standard for the monitor.

Features

- 1920×1080 Native Resolution Panel
- High Quality Color Reproduction
- Various Area, Safety and Center Marker
- H/V Delay, NATIVE, Blue/Mono Display
- 8 Channel Audio Meters, Time code，UMD, Tri-color Tally
- Field upgradeable
- Audio De-embedding for SDI Input
- Build-in Speaker and Audio Line Output

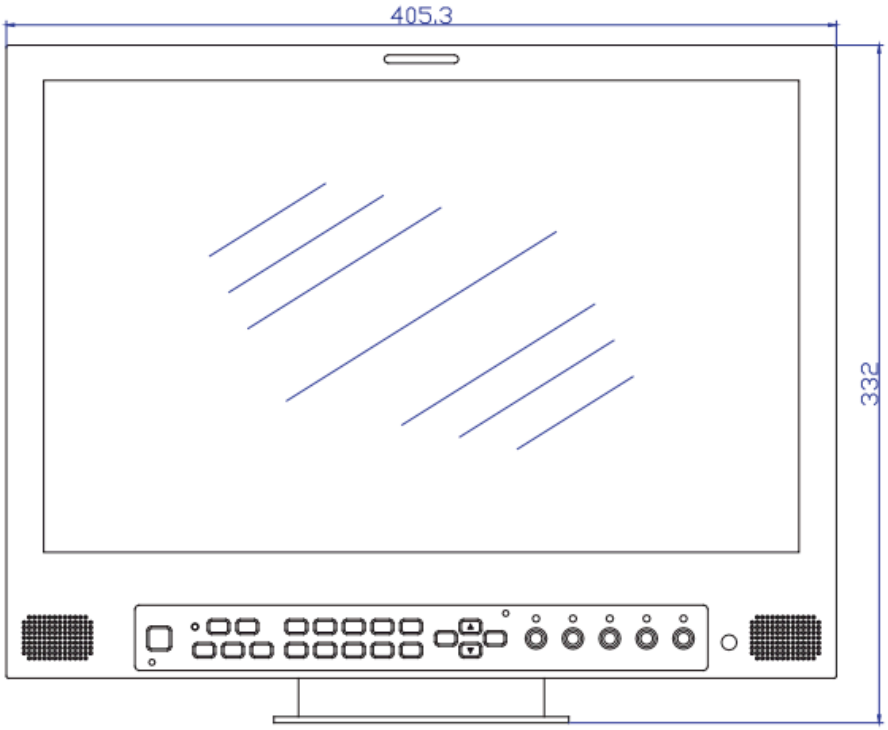
Chapter 2 Unpacking and Installation

Unpack the LMW156 Monitor and inspect for any apparent physical damage that may have occurred in transit. In addition to the monitor, the packaging should contain a power cord, warranty card, a power adapter (AC to DC) and table stand. Five M4 x 8mm screws for table stand, and four M4 x 6mm screws are also provided for the optional rack mount ears. Standard and optional accessories are covered in Chapter 8 of this manual.
We recommend you retain the shipping carton for future use.

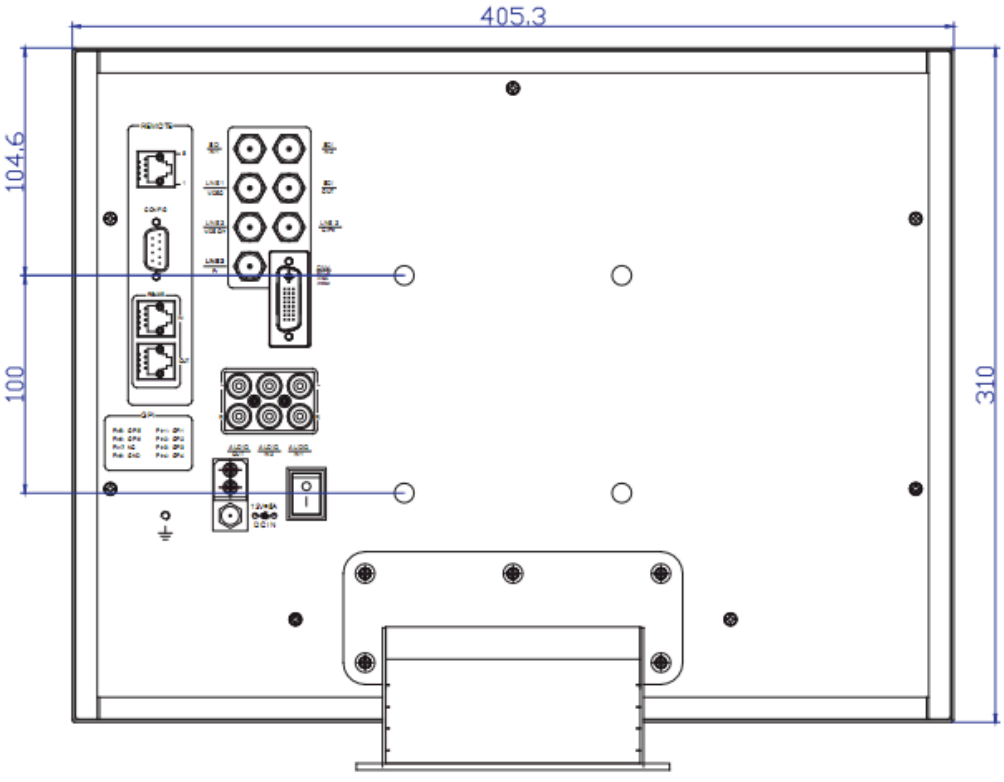
1. When installing a mount option, please assure a soft and non-scratch surfaced is used to place the monitor on.
2. Place the monitor on the soft surface screen face down for installation of table stand or mount.
3. Use the included M3x6mm screws to attach the table stand either option.
   Use the included M4x8mm screws to attach the mount either option.
   The table stand attaches on the rear bottom of the unit whilst the mount is located on the rear center.
   Please refer to Chapter 3 for further reference.
4. Place the LMW156 in the required location for operation.
5. Connect the required signals. For BNC connections use 75Ω rated connectors.
6. Connect A.C. Mains power using the included EIC power cord. Please ensure an Earth ground present to ensure proper operation of the unit.
7. As a final step turn on the mains power using the toggle switch located on the rear of the LMW156 above the power connection.

Chapter 3 Dimensions

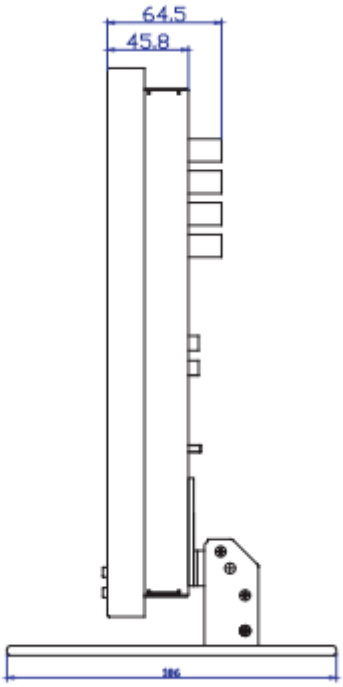
Front View （Unit: mm）



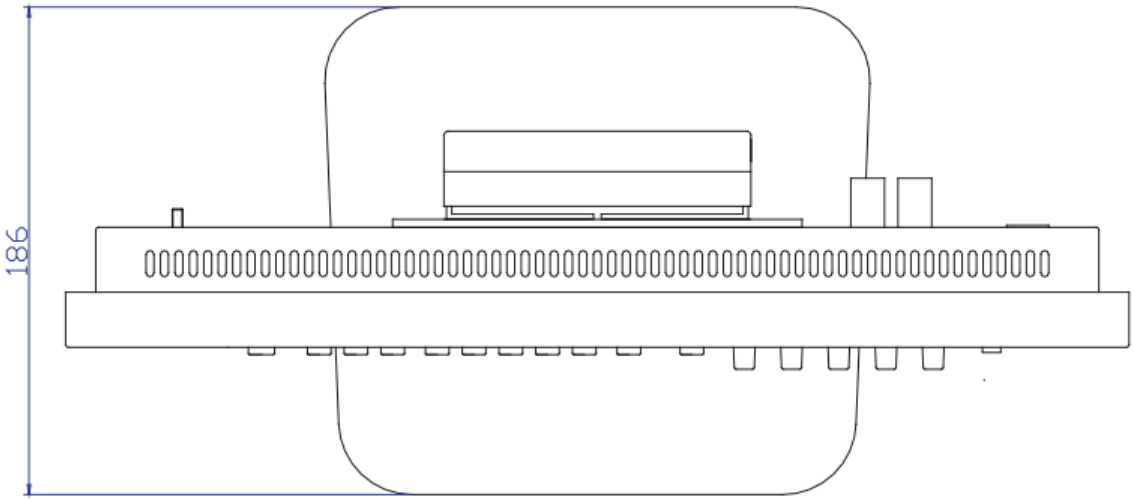
Rear View （Unit: mm ）



Side View （Unit: mm）

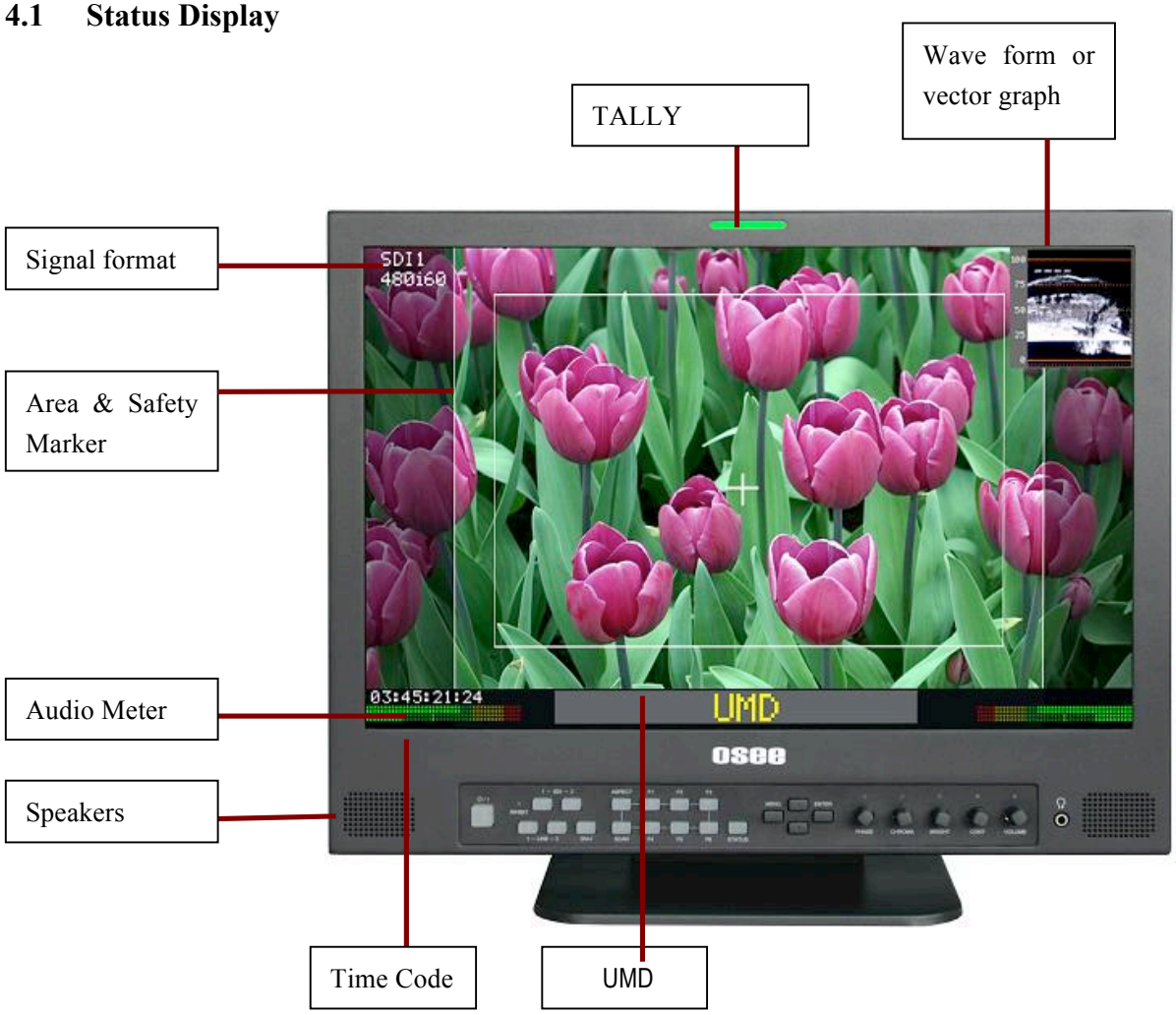


Top Side View （Unit: mm）



Chapter 4 Operation

4.1 Status Display



☞ **Tally Indicator:**

It is used to check the status of the monitor by the color of the tally lamp.

(For more information, see the fourth page of "USER CONFIG" menu)

☞ **Speakers**

Output the audio which is selected by the input terminal select button.

☞ **Wave form or vector graph**

It is used to check the wave form or vector graph of the displaying signal picture.

Only used for SDI signal.

You can open and set the wave form or vector graph on the second page of "USER CONFIG" menu.

4.2 Input Signals

The following input signals are supported by the LMW156 monitor:

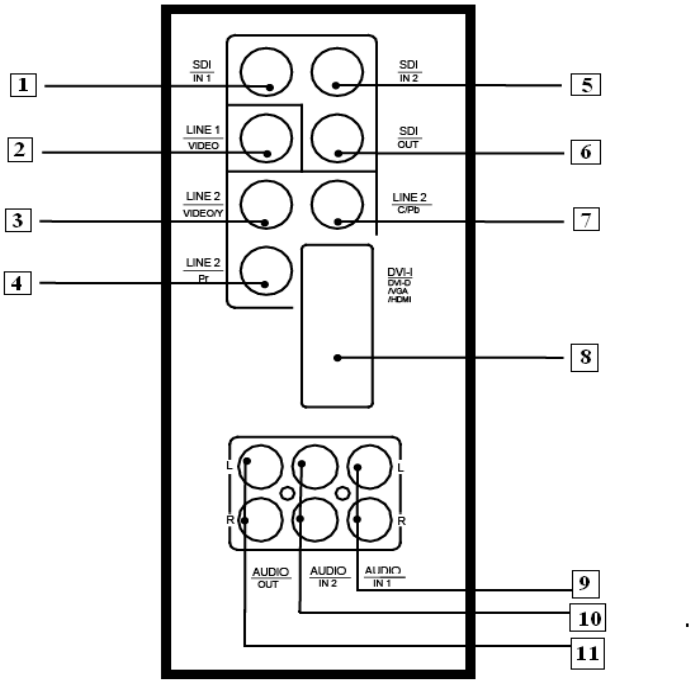
Format	SDI			Video	Y/C	YPbPr	HDMI	DVI	VGA
Device Type*	LMW156V	LMW156S	LMW156H	LMW156	LMW156	LMW156	LMW156	LMW156	LMW156
NTSC	/	/	/	YES	YES	/	/	/	/
PAL	/	/	/	YES	YES	/	/	/	/
SECAM	/	/	/	YES	YES	/	/	/	/
NTCS-4.43	/	/	/	YES	YES	/	/	/	/
PAL-M	/	/	/	YES	YES	/	/	/	/
480I60	/	YES	YES	/	/	YES	YES	/	/
576I50	/	YES	YES	/	/	YES	YES	/	/
480P60	/	/	/	/	/	YES	YES	/	/
576P50	/	/	/	/	/	YES	YES	/	/
720P24	/	/	YES	/	/	YES	YES	/	/
720P25	/	/	YES	/	/	YES	YES	/	/
720P30	/	/	YES	/	/	YES	YES	/	/
720P50	/	/	YES	/	/	YES	YES	/	/
720P60	/	/	YES	/	/	YES	YES	/	/
1035I60	/	/	YES	/	/	YES	YES	/	/
1080I60	/	/	YES	/	/	YES	YES	/	/
1080I50	/	/	YES	/	/	YES	YES	/	/
1080P24	/	/	YES	/	/	YES	YES	/	/
1080P25	/	/	YES	/	/	YES	YES	/	/
1080P30	/	/	YES	/	/	YES	YES	/	/
1080P50	/	/	/	/	/	YES	YES	/	/
1080P60	/	/	/	/	/	YES	YES	/	/
1080SF24	/	/	YES	/	/	YES	YES	/	/
VGA	/	/	/	/	/	/	/	YES	YES
SVGA	/	/	/	/	/	/	/	YES	YES
XGA	/	/	/	/	/	/	/	YES	YES
SXGA	/	/	/	/	/	/	/	YES	YES
UXGA	/	/	/	/	/	/	/	YES	YES
WVGA	/	/	/	/	/	/	/	YES	YES
WXGA	/	/	/	/	/	/	/	YES	YES
WUXGA	/	/	/	/	/	/	/	YES	YES

*: For "Device Type", LMW156 includes LMW156V, LMW156S and LMW156H.

"YES": Adjustable/can be set; "\" : Not adjustable/cannot be set

4.3 Rear Panel Terminals

A. Audio and Video Connections



The specifications of terminals are as follows :

1 SDI IN1 : SDI 1 Input Terminal

SD-SDI input signal which is in compliance with SMPTE259M and ITU-R BT656 standard.

5 SDI IN2 : SDI 2 Input Terminal

SD-SDI input signal which is in compliance with SMPTE259M and ITU-R BT656 standard.

6 SDI OUT : SDI Output Terminal

Output terminal for selected SDI signal.

2 LINE1(VIDEO) : LINE 1 Input Terminal

Analog Composite Video Signal only.

3 LINE2 (VIDEO/Y): LINE 2 Input Terminal

Analog Composite Video input signal, or luminance (Y) signal of Y/C or YPbPr.

7 LINE2 (C/Pb): LINE 2 Input Terminal

Chroma (C) signal of Y/C or Pb(Blue) component of YPbPr .

4 LINE2 (Pr): LINE 2 Input Terminal

Pr (Red) component of YPbPr .

8 DVI-I(DVI-D/VGA/HDMI): DVI-I Input Terminal

DVI analog/digital. Requires adapter for VGA signals. Supports HDMI input signal.

9 AUDIO IN1: Analog Audio (IN1) Terminal

Input terminal for the analog audio signal.

L:left audio channel; **R:** right audio channel.

10 AUDIO IN2: Analog Audio (IN2) Terminal

Input terminal for the analog audio signal.

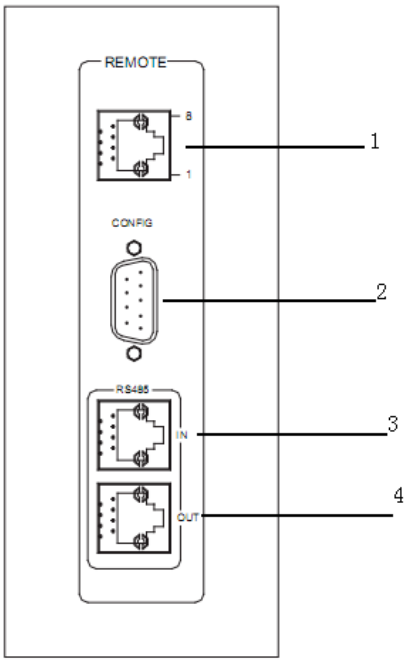
L:left audio channel; **R:** right audio channel.

11 AUDIO OUT: Analog Audio (OUT) Terminal

Outputs the audio signal which is selected by the input select button on the front panel.

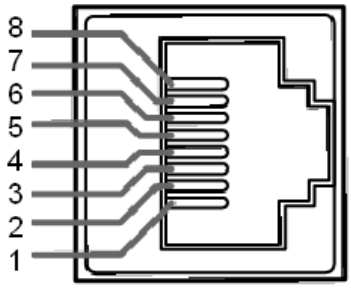
L:left audio channel; **R:** right audio channel.

B. The right part of rear panel



The specifications of terminals are as follows ：

1 GPI ： GPI Terminal



Female RJ-45 Receptacle

PIN	Description
PIN 1	GPI1
PIN 2	GPI2
PIN 3	GPI3
PIN 4	GPI4
PIN 5	GPI5
PIN 6	GPI6
PIN 7	NC
PIN 8	GND

For the detailed information about GPI 1-GPI 6, see the fourth page of “USER CONFIG” menu.

2 CONFIG ： Configuration Terminal

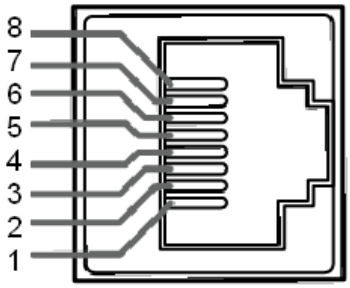
It is used to update the hardware program only.

3 RS485 IN : RS485 IN Terminal ；

It is used to support dynamic UMD/Tally

4 RS485 OUT : RS485 OUT Terminal ；

It is used to support dynamic UMD/Tally



Female RJ-45 Receptacles

Pin No.	RS485 IN Terminal Signal	RS485 OUT Terminal Signal
1,2	GND	GND
3	Tx-	Tx-
4	Rx+	Rx+
5	Rx-	Rx-
6	Tx+	Tx+
7,8	NC	NC

5 O/－ **(Power) Switch**

The power is turned on or off.

The monitor is turned on by pressing side－.

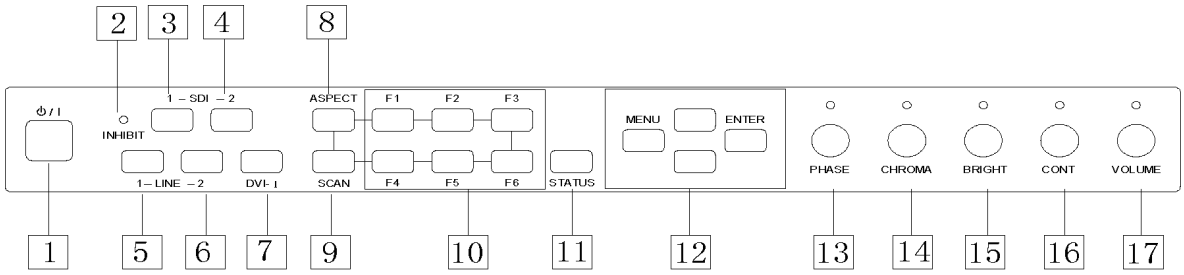
6 Power Input Connector

Total power consumption: 100-240V AC, 50-60Hz.

Equipment power consumption: 40W.

A power source with the capacity of more than 45W is recommended.

4.4 Location and Function of Control Buttons And Knobs On Front Panel



☞ **（1）POWER : Power Standby / ON Switch**

Press this switch to turn on the power of this unit or to set this unit in the standby mode(the O/ - power switch on the rear panel is turned on).

Last settings recall with power.

Unlit: The monitor is completely off (mains switch is off).

Lights in Green: The monitor is on.

Lights in Red: The monitor is off (standby).

☞ **（2）INHIBIT Indicator**

Lights in orange when the key inhibit is set to ON.

(For more information, refer to the CONTROL menu of chapter 6).

☞ **（3）SDI 1 Button/Lamp**

Press the button to monitor the signal through the SDI1 terminal.

When the button is pressed, the SDI1 button lamp will light.

☞ **（4）SDI 2 Button/Lamp**

Press the button to monitor the signal through the SDI2 terminal.

When the button is pressed, the SDI2 button lamp will light.

☞ **（5）LINE 1 Button/Lamp**

Press the button to monitor the signal through the LINE 1 terminal.

When the button is pressed, the LINE 1 button lamp will light.

☞ **（6）LINE 2 Button/Lamp**

Press the button to monitor the input signal among VIDEO, Y/C, YPbPr. On the first page of USER CONFIG menu, from “LINE 2 Input” item, you can set the input signal format which should be monitored.

When the button is pressed, the LINE 2 button lamp will light.

☞ **（7）DVI-I Button/Lamp**

Press the button to monitor the input signal among VGA, DVI-D, and HDMI. On the first page of USER CONFIG menu, from “DVI-I Input” item, you can set the input signal format which should be monitored.

When the button is pressed, the DVI-I button lamp will light.

☞ **（8）ASPECT Button/lamp**

Press to set the aspect ratio of the picture, 4:3 or 16:9.

Scaled mode only effects for SD signal. For VGA, DVI and HD input signal, it is not valid and is defaulted to 16:9 mode.

When the 4:3 mode is set, the button lamp lights and this status can be saved.

Note:

For the available input signals of the ASPECT Button, see the description of "4.5 Input Signals and Adjustable/setting Items" on this chapter.

☞ **（9） SCAN Button/lamp**

Press to change the scan size of the picture between **normal** (100% picture) and **over** (95% picture). For VGA and DVI input signal, it is not valid and is defaulted to **normal** mode.

When the OVER mode is set, the button lamp lights and this status can be saved.

☞ **（10）F1-F6 Button/lamp**

F1-F6 can be used as quick-button.

You can turn the assigned function on or off.

When the button is pressed, the button lamp will light up. However, in some cases, the button lamp will not light up.

- ◆ When the assigned function is set to be "OFF" in the main menu and the corresponding button is pressed, the button lamp will not light up.
- ◆ In the quick-button function menu, when the character color is blue, the corresponding button lamp will not light up.

You can assign each button function on the third page of USER CONFIG menu.

- ✓ When the current menu is not the main menu, press to call out the quick-button function menu, the selected item displays in yellow. Execute the function which is selected in USER CONFIG page 3 menu. If set operating, the button lamp will be lighted.
- ✓ When the current menu is the main menu, press to execute the function which is selected in USER CONFIG page 3 menu. If set operating, the button lamp will be lighted. However, it can not call out the quick-button function menu.

The factory setting is as follows.

Tab. The Quick-button Function Menu

F1	MARKER
F2	AUDIO METER
F3	H/V DALAY
F4	NATIVE
F5	AUTO ADJ
F6	BLUE ONLY

The quick-button function menu disappears automatically if it is not operated for 5 seconds.

Note:

For the quick-button function menu, the button function is valid if the character color is white.

The button function is not valid if the character color is blue.

☞ **（11）STATUS: Status Indication Button**

Press to display the status menu. When the main menu is on, this button is unavailable.

(For more information, see the **STATUS** menu of chapter 6).

☞ （12）**MENU, ENTER, UP, DOWN Button**

Displays or sets the main menu.

Menu button:

Press to display the main menu, when the on-screen menu is not the main menu.

Press again to clear the main menu. (For more information, see the chapter 5)

Enter button:

- Press to confirm a selected item on the menu, when the on-screen menu is the main menu . (For more information, see the chapter 5)
- When the on-screen menu is not the main menu and the button is pressed, the quick-button function menu is displayed. Press again to clear the quick-button function menu.

  Or, if the current menu is quick-button function menu, press to clear it.

UP, DOWN Button:

Press to select the items and setting values. (For more information, see the chapter 5)

☞ **(13) PHASE Knob**

Displays and adjusts the picture hue value.

1. Press this knob to display the picture hue value.
2. Adjust the knob clockwise, the value increases. Adjust the knob counter-clockwise, the value decreases. The adjusted value will be saved.
3. When the current value of hue is not the default setting value (50), the indicator lamp above the knob will light. Return the value to the default settings (50), the indicator goes out.
4. If the adjustment function is enabled and left unattended, the menu will automatically disappear after 3 seconds.
5. Adjustment values range: 0-100.

Note: Only for the input signal (VIDEO：NTSC and Y/C：NTSC), the PHASE menu is available.

☞ (**14) CHROMA Knob**

Displays and adjusts the picture color saturation value:

1. Press this knob to open the picture color saturation menu.
2. Adjust the knob clockwise, the value increases. Adjust the knob counter-clockwise, the value decreases. The adjusted value will be saved.
3. If left unattended, the menu automatically disappears after 3 seconds.
4. When the current value of saturation is not the default setting value (50), the indicator lamp above the knob will light. Return the value to the default settings (50), the indicator goes out.
5. Adjustment values range: 0-100.

Note: When the input signals are VGA or DVI-D, this knob is not available.

☞ **(15) BRIGHT Knob**

Displays and adjusts the picture brightness value:

1. Press this knob to display the picture brightness menu.
2. Adjust the knob clockwise, the value increases. Adjust the knob counter-clockwise, the value decreases. The adjusted value will be saved.
3. If the adjustment function is enabled and left unattended, the menu automatically disappears after 3 seconds.
4. When the current value of saturation is not the default setting value (50), the indicator lamp above the knob will light. Return the value to the default settings (50), the indicator goes out.
5. Adjustment values range: 0-100.

☞ (**16) CONT Knob**

Displays and adjusts the picture contrast value:

1. Press this knob to display the picture contrast value.
2. Adjust the knob clockwise, the value increases. Adjust the knob counter-clockwise, the value decreases. The adjusted value will be saved.
3. If the adjustment function is enabled and left unattended, the menu automatically disappears after 3 seconds.
4. When the current value of saturation is not the default setting value (50), the indicator lamp above the knob will light. Return the value to the default settings (50), the indicator goes out.
5. Adjustment values range: 0-100.

☞ (**17) Volume Knob**

Displays and adjusts the speaker volume value; and enables/disables speaker mute function:

1. Press this knob to toggle mute on/off. If toggled to the mute function, the indicator lamp above the knob will light. At the same time, the icon "MUTE" will display on the right bottom of the screen. To cancel this function, press **VOLUME** knob again. At the same time, the indicator lamp above the knob will go out and the icon "MUTE" will disappear.
2. Turning the knob will toggle to the speaker volume function and adjust the speaker volume value. Adjust the knob clockwise, the value increases. Adjust the knob counter-clockwise, the value decreases. The adjusted value will be saved. If the adjustment function is enabled and left unattended, the menu automatically disappears after 3 seconds.
3. Volume adjustment range is 0-30.

Note: For VGA or DVI-D input signal, there is no audio.

4.5 Input Signals and Adjustable/setting Items

Item	Input signal							
	Video ; Y/C	YPbPr SD	YPbPr HD	SDI SD	SDI HD	HDMI	DVI	VGA
Contrast	YES	YES	YES	YES	YES	YES	YES	YES
Bright	YES	YES	YES	YES	YES	YES	YES	YES
Chroma	YES	YES	YES	YES	YES	YES	\	\
Phase	NTCS	\	\	\	\	\	\	\
NTSC Setup	NTSC	\	\	\	\	\	\	\
Compo Level	SMPTE	480I60	SMPTE	SMPTE	SMPTE	SMPTE	\	\
Color Temp	YES	YES	YES	YES	YES	YES	YES	YES
SCAN	YES	YES	YES	YES	YES	YES	FULL	FULL
ASPECT	YES	YES	\	YES	\	SD/YES	\	\
MARKER	YES	YES	YES	YES	YES	YES	\	\
BLUE ONLY	YES	YES	YES	YES	YES	YES	\	\
MONO	YES	YES	YES	YES	YES	YES	\	\
H/V DELAY	\	\	\	YES	YES	\	\	\
DOT PHASE	\	\	\	\	\	\	\	YES
H Position	\	\	\	\	\	\	\	YES
V Position	\	\	\	\	\	\	\	YES
Audio	Ext	Ext	Ext	Ext/Ebd	Ext/Ebd	Ext/Ebd	\	\
Time Code	\	\	\	YES	YES	\	\	\
UMD	YES	YES	YES	YES	YES	YES	\	\
Audio Meter	YES	YES	YES	YES	YES	YES	\	\

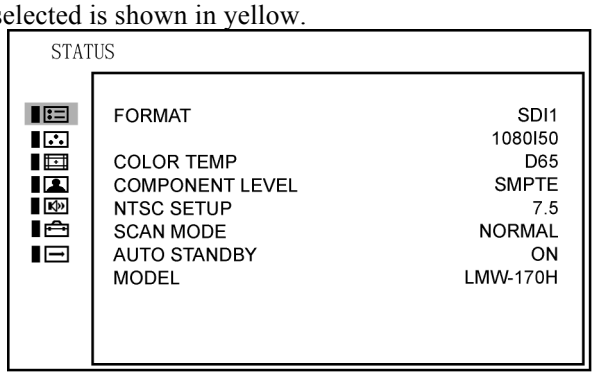
"YES" **:** Adjustable/can be set; "\" **:** Not adjustable/cannot be set

Chapter 5 Menu Operation Guide

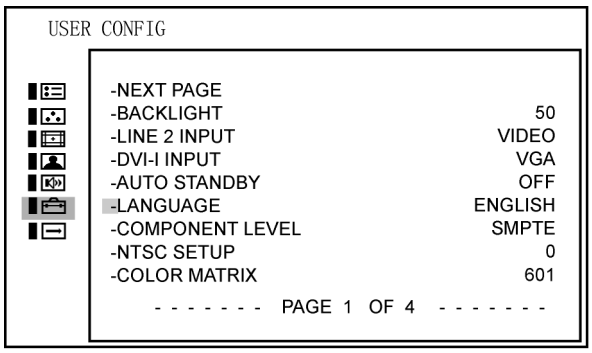
5.1 Selecting the Menu Language

You can select one of two languages (English, Chinese) for displaying the menu and other on-screen displays. ”English” is selected in the default setting.
The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.

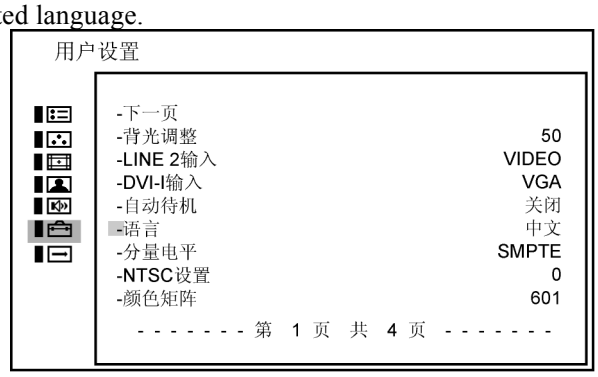
1. Turn on the unit.
2. Press MENU button.
   The menu appears.
   The menu presently selected is shown in yellow.



3. Press □（up）or □(down) button to select the first page of USE CONFIG menu, then press the ENTER button. The setting items (icons) in the selected menu are displayed in yellow.


USER CONFIG
-NEXT PAGE
-BACKLIGHT 50
-LINE 2 INPUT VIDEO
-DVI-I INPUT VGA
-AUTO STANDBY OFF
-LANGUAGE ENGLISH
-COMPONENT LEVEL SMPTE
-NTSC SETUP 0
-COLOR MATRIX 601
- - - - - - - PAGE 1 OF 4 - - - - - - -

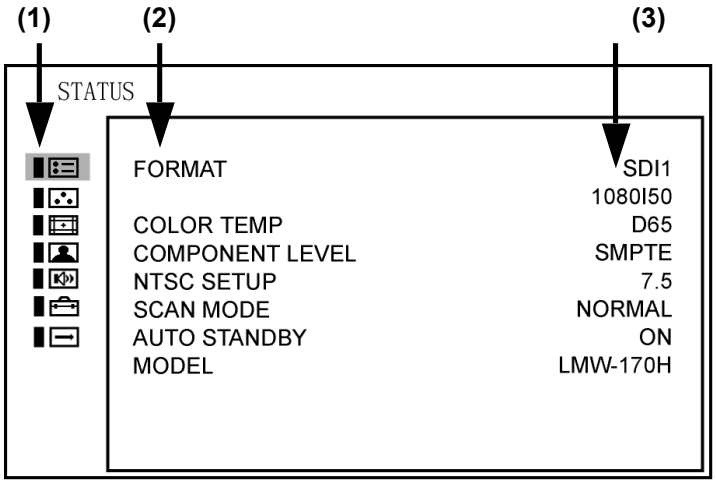
4. Press □（up）or □(down) button to select “LANGUAGE,” then press the ENTER button. The selected item is displayed in yellow.
5. Press □（up）or □(down) button to select a language, then press the ENTER button. The menu changes to the selected language.



To clear the menu:
Press the MENU button.
The menu disappears automatically if none of the buttons is operated for one minute.

5.2 Using the Menu

The unit is equipped with an on-screen menu for making various adjustments and settings such as **STATUS**, **COLOR TEMP**, **MARKER**, etc.
The current settings are displayed in place of the ■ marks on the illustrations of the menu screen.



(1): Main Menu Item Select Field

Pressing Up/down key can select the sub menu.
Pressing Enter key can enter into the control item.
Pressing Menu key can quit the main menu.

(2): Sub Menu Item Select Field

Pressing Up/down key can select the control item.
Pressing Enter key can enter into the sub adjustable item.
Pressing Menu key can return to main menu.

(3): Control Item Select Field

Pressing Up/down key can adjust the item value, if the item is adjustable.
Pressing Enter key can save and quit current item. The item in white means the value is adjustable, the item in blue means the value is not adjustable.
Pressing Menu key can quit current item, but can not save adjusted item.

While the menu is on, it can refresh the menu, if the input changed

To clear the menu:

Press the MENU button.
The menu disappears automatically if none of the buttons is operated for one minute.

Chapter 6 LMW156 Series LCD Monitor Menu Structure

6.1 Main Menu

The screen menu of this monitor consists of the following items.

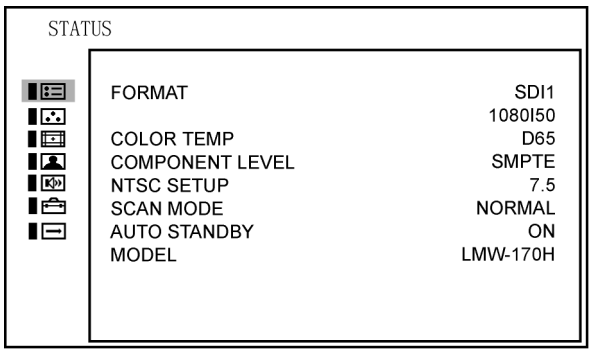
[Label]	[Main Menu Item]	[Sub Menu]
	STATUS	**1**
	COLOR TEMP	**1**
	MARKER	**1**
	VIDEO CONFIG	**1**
	AUDIO CONFIG	**3**
	USER CONFIG	**5**
	CONTROL	**1**

6.2 Adjusting and Changing the Settings

STATUS

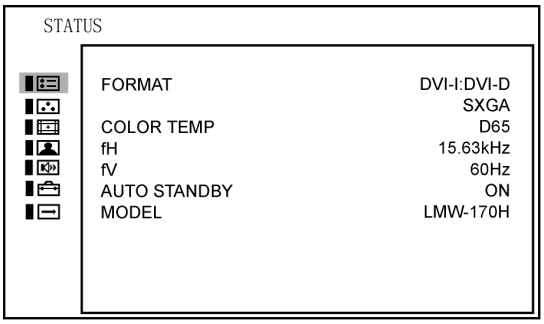
The STATUS menu is used to display the current status of the unit. The following items are displayed.

For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.



STATUS	
FORMAT	SDI1
	1080I50
COLOR TEMP	D65
COMPONENT LEVEL	SMPTE
NTSC SETUP	7.5
SCAN MODE	NORMAL
AUTO STANDBY	ON
MODEL*	LMW156H

For the DVI/VGA input, the following items are displayed.

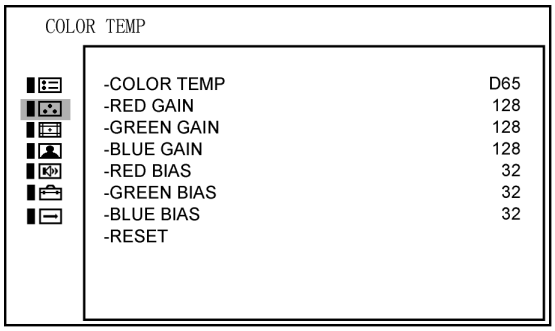


STATUS	
FORMAT	DVI-I:DVI-D
	SXGA
COLOR TEMP	D65
fH	15.63kHz
fV	60Hz
AUTO STANDBY	ON
MODEL*	LMW156-H

** For Model, it will display LMW156H or LMW156S or LMW156V, depending on the unit model.*

COLOR TEMP

The COLOR TEMP menu is used for adjusting the picture white balance.

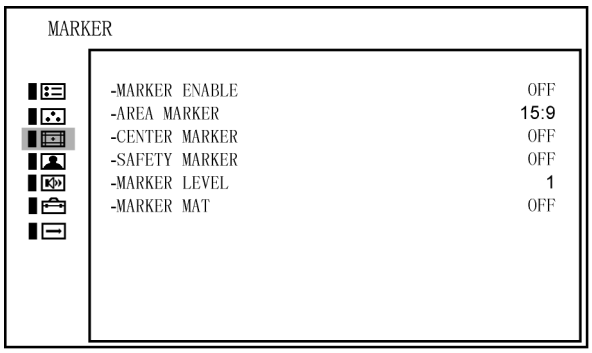


Sub Menu	***Settings***	***Explanation***
COLOR TEMP		
-COLOR TEMP	D65	Used to select the color temperature that will become the basis for adjustments: • <D93> around 9300K • <D65> around 6500K • <D56> around 5600K • <USER>
-RED GAIN	0-255	<0-60>, factory preset settings: 128
-GREEN GAIN	0-255	<0-60>, factory preset settings: 128
-BLUE GAIN	0-255	<0-60>, factory preset settings: 128
-RED BIAS	0-64	<0-60>, factory preset settings: 32
-GREEN BIAS	0-64	<0-60>, factory preset settings: 32
-BLUE BIAS	0-64	<0-60>, factory preset settings: 32
-RESET		This returns the GAIN and BIAS settings to the factory presets

When adjusting the GAIN and BIAS settings, the item display moves to the middle part of the screen.

MARKER

The MARKER menu is used for setting the marker.



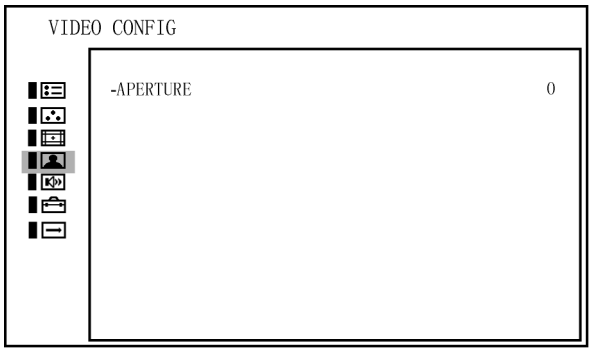
Sub Menu	*Settings*	*Explanation*
MARKER		
-MARKER ENABLE	ON	<ON> marker displayed <OFF> marker not displayed
-AREA MARKER	15:9	Selects the area marker aspect ratio according to the display aspect, ☞ **For display aspect ratio is 16:9** <OFF> <4:3> vertical <15:9> vertical <14:9>vertical <13:9> vertical <1.85:1> horizontal <2.35:1> horizontal ☞ **For display aspect ratio is 4:3** <OFF> <16:9>
-CENTER MARKER	ON	<ON> marker displayed <OFF> marker not displayed
-SAFETY MARKER	OFF	Setting the picture safe area size marker for the aspect ratio determined by the button which the aspect function is assigned. (According to display aspect and SCAN control) • <OFF> • <80%> • <85%> • <88%> • <90%> • <93%> • <95%>

Sub Menu	*Settings*	*Explanation*
-MARKER LEVEL	<1>	Sets the luminance to display safety, center and area marker line. • <1>: 50% white level • <2>: 75% white level • <3>: 100% white level
-MARKER MAT	<OFF>	Sets the area marker mat transparency. • <OFF> : Normal background, only use line for area marker edge indication • <HALF> : 50% background brightness • <BLACK> : Black

- *16:9 and 4:3 area marker settings are stored separately.*
  Use 16:9 setting if display aspect is 16:9; Use 4:3 setting if display aspect is 4:3
- *Marker is disabled when SCAN is NATIVE, input is DVI or VGA.*

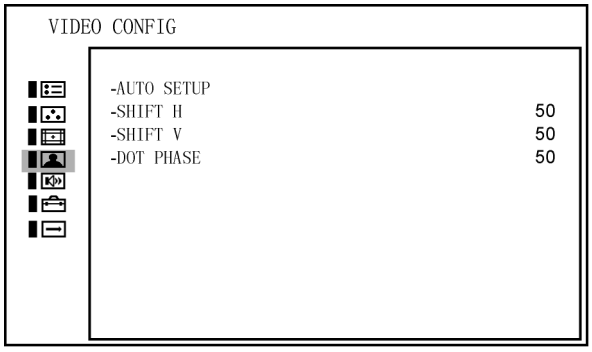
VIDEO CONFIG

For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.



Sub Menu	*Settings*	*Explanation*
VIDEO CONFIG		
PICTURE CONTROL		
-APERTURE	0	<0-100>

For the DVI/VGA input, the following items are displayed.

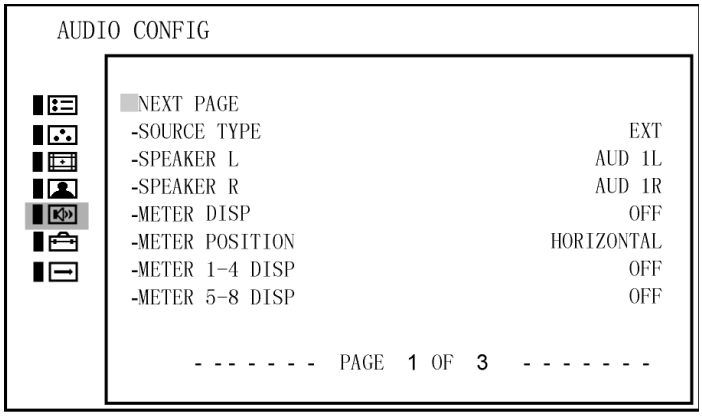


Sub Menu	*Settings*	*Explanation*
VIDEO CONFIG		
PICTURE CONTROL		
-AUTO SETUP[1]		Automatic Pixel Adjustment, press to adjust the picture automatically to maximize clarity and correct H/V position for the VGA input signal
-SHIFT H	50	Adjusts the horizontal position of the picture <0-100>
-SHIFT V	50	Adjusts the vertical position of the picture <0-100>
-DOT PHASE	50	Adjusts the dot phase <0-100>

1. For "AUTO SETUP" menu, it is valid for VGA input, but not valid for DVI input.

AUDIO CONFIG

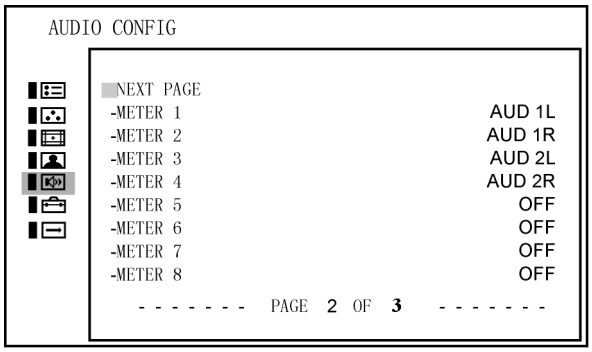
For the video inputs include SDI1, SDI2, Line1, Line2 or DVI-I (HDMI input only), the following items are displayed.


AUDIO CONFIG
NEXT PAGE
-SOURCE TYPE EXT
-SPEAKER L AUD 1L
-SPEAKER R AUD 1R
-METER DISP OFF
-METER POSITION HORIZONTAL
-METER 1-4 DISP OFF
-METER 5-8 DISP OFF
- - - - - - - PAGE 1 OF 3 - - - - - - -

Sub Menu	*Settings*	*Explanation*
AUDIO CONFIG 1/3		
GENERAL SETUP		
-NEXT PAGE		
-SOURCE TYPE	EXT	Used to select the audio source type <EXT> <EBD> can be selected only for SDI or HDMI input <NONE>
-SPEAKER L	AUD 1L (EBD CH1)	Select the audio channel to the left speaker based on the selected audio source type ☞ <OFF> ☞ If SOURCE TYPE is EXT <AUD 1L, AUD 1R, AUD 2L, AUD 2R> ☞ If SOURCE TYPE is EBD and SDI input <EBD CH1 – EBD CH16> ☞ If SOURCE TYPE is EBD and HDMI input <EBD CH1 – EBD CH2>

Sub Menu	*Settings*	*Explanation*
-SPEAKER R	AUD 1R (EBD CH2)	The same as above
-METER POSITION	HORIZONTAL	<HORIZONTAL> <VERTICAL>
-METER DISP	OFF	<OFF> <ON>
-METER 1-4 DISP	OFF	<OFF> <1-2> <1-4>
-METER 5-8 DISP	OFF	<OFF> <5-6> <5-8>

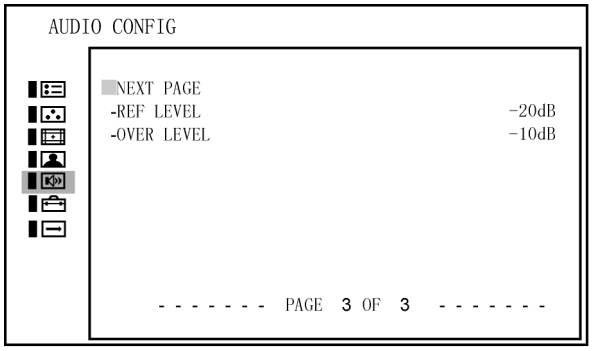
Press □(up)or □(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows.


AUDIO CONFIG
NEXT PAGE
-METER 1 AUD 1L
-METER 2 AUD 1R
-METER 3 AUD 2L
-METER 4 AUD 2R
-METER 5 OFF
-METER 6 OFF
-METER 7 OFF
-METER 8 OFF
- - - - - - - PAGE 2 OF 3 - - - - - - -

Sub Menu	*Settings*	*Explanation*
AUDIO CONFIG 2/3		
METER SOURCE		
-NEXT PAGE		
-METER 1	AUD 1L (EBD CH1)	Used to assign the audio channel for meter display based on the selected audio source type ☞ <OFF> ☞ If SOURCE TYPE is EXT <AUD 1L, AUD 1R, AUD 2L, AUD 2R> ☞ If SOURCE TYPE is EBD and SDI input <EBD CH1 – EBD CH16> ☞ If SOURCE TYPE is EBD and HDMI input <EBD CH1 – EBD CH2>
-METER 2	AUD 1R (EBD CH2)	The same as above
-METER 3	AUD 2L (EBD CH3)	The same as above
-METER 4	AUD 2R (EBD CH4)	The same as above
-METER 5	OFF (EBD CH5)	The same as above

Sub Menu	*Settings*	*Explanation*
-METER 6	OFF (EBD CH6)	The same as above
-METER 7	OFF (EBD CH7)	The same as above
-METER 8	OFF (EBD CH8)	The same as above

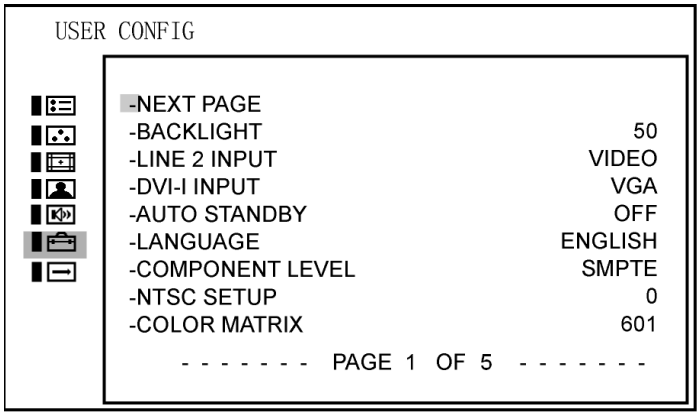
Press □(up)or □(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows. Select “NEXT PAGE” item in the following menu, it will return to display the first page menu of “AUDIO CONFIG”.



Sub Menu	*Settings*	*Explanation*
AUDIO CONFIG 3/3		
LEVEL SETUP		
-NEXT PAGE		
-REF LEVEL	-20dB	<-20dB> <-18dB>
-OVER LEVEL	-10dB	<-10dB> <-8dB > <-6dB > <-4dB > <-2dB >

USER CONFIG

The USER CONFIG menu is used for setting the LINE 2 input, DVI-I input, language, etc.


USER CONFIG
-NEXT PAGE
-BACKLIGHT 50
-LINE 2 INPUT VIDEO
-DVI-I INPUT VGA
-AUTO STANDBY OFF
-LANGUAGE ENGLISH
-COMPONENT LEVEL SMPTE
-NTSC SETUP 0
-COLOR MATRIX 601
- - - - - - - PAGE 1 OF 5 - - - - - - -

Sub Menu	*Settings*	*Explanation*
USER CONFIG 1/5		
SYSTEM SETUP		
-NEXT PAGE		
-BACKLIGHT[1]	50	Adjusts the backlight <0 ... 100>
-LINE 2 INPUT	VIDOE	Selects the LINE 2 input type • <VIDEO> • <Y/C> • <YPbPr>
-DVI-I INPUT[2]	VGA	Selects the DVI-I input type • <VGA> • <DVI-D> • <HDMI>
-AUTO STANDBY	OFF	Sets the power saving mode turn on/off PANEL (include backlight and panel power supply, signal to panel) • <ON> the monitor goes into power saving mode if no signal is input for about one minute • <OFF> the monitor keeps power on regardless input signal status
-LANGUAGE	ENGLISH	<ENGLISH>: English <中文>: Chinese
-COMPONENT LEVEL[3]	SMPTE	Only for 480i60 component input, refer to table 1 • <SMPTE> for 100/0/100/0 signal • <BETA0> for 100/0/75/0 signal • <BETA7.5> for 100/7.5/75/7.5 signal
-NTSC SETUP[4]	0	Only for NTSC signal • <0> for Japan • <7.5> for North America
-COLOR MATRIX[5]	601	Applied to 480/60I or 480/60P • <601> • <709>

1. Backlight Intensity is a factor in the operating life of the backlight. Reducing the intensity will lengthen the backlight life whilst maximum intensity will decrease backlight life.

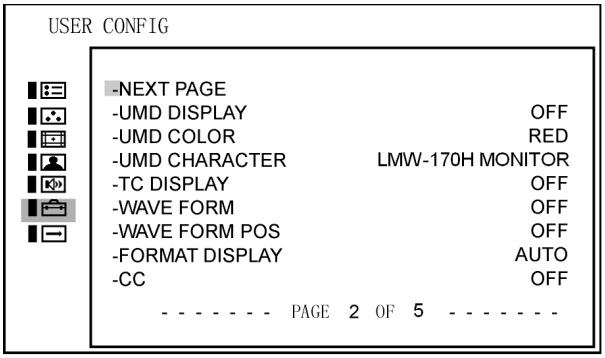
*2. **NOTES:** the displaying signal, switching from HDMI to DVI-D or from DVI-D to HDMI, may not normally display.*

3. Component level only effects for YPbPr 480i input signal, and it will be set in blue color when other signal. Component level always uses SMPTE except for 480i60 input signal.

4. NTSC SETUP only effects for NTSC input signal, and it will be set in blue color when other signal.

5. COLOR MATRIX is only applied to 480i/60 or 480/60p input signal, and it will be set in blue color when other signal.

Press □ (up) or □ (down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows.


USER CONFIG
-NEXT PAGE
-UMD DISPLAY OFF
-UMD COLOR RED
-UMD CHARACTER LMW-170H MONITOR
-TC DISPLAY OFF
-WAVE FORM OFF
-WAVE FORM POS OFF
-FORMAT DISPLAY AUTO
-CC OFF
- - - - - - - PAGE 2 OF 5 - - - - - - -

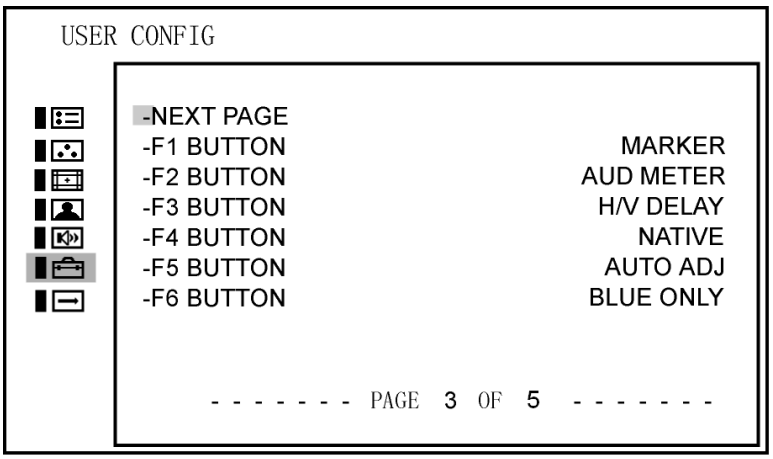
Sub Menu	*Settings*	*Explanation*
USER CONFIG 2/4		
-NEXT PAGE		
-UMD DISPLAY	OFF	<ON> <OFF>
-UMD COLOR	RED	<RED> <GREEN> <YELLOW> <WHITE>
-UMD CHARACTER[1]	LMW156H MONITOR	16 characters
-TC DISPLAY	OFF	<ON> <OFF> Display --:--:--:-- if no TC in ANC
-WAVE FORM [2]	OFF	<OFF> <WAVE>:Waveform <VECT75> Vector graph <VECT100> Vector graph
-WAVE FORM POS [2]	TOP RIGHT	<BOT LEFT> <BOT RIGHT> <TOP LEFT> <TOP RIGHT>
-FORMAT DISPLAY	AUTO	• <ON> the format and scan mode are always displayed • <AUTO> the format and scan mode are displayed for about 10 seconds when the input of the signal starts • <OFF> the display is hidden
-CC [3]	OFF	<OFF> <CC1> <CC2> <CC3> <CC4> <TEXT1> <TEXT2> <TEXT3> <TEXT4> <XDS>

1. The default of "UMD CHARACTER" depends on the type of device.

2. Wave form is used to check the wave form and vector graph of the displaying signal picture. Only used for SDI signal.

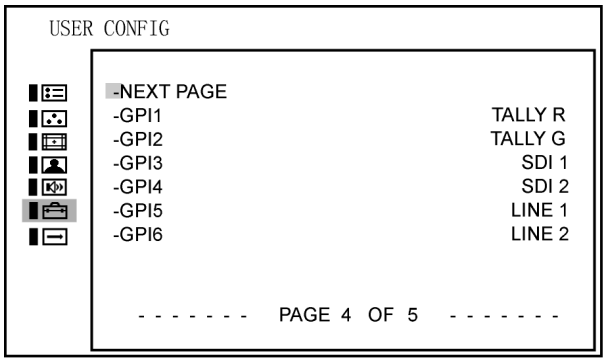
3. CC only can be used for VIDEO: NTSC and Y/C: NTSC input signal.

Press □(up)or □(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows.


USER CONFIG
-NEXT PAGE
-F1 BUTTON MARKER
-F2 BUTTON AUD METER
-F3 BUTTON H/V DELAY
-F4 BUTTON NATIVE
-F5 BUTTON AUTO ADJ
-F6 BUTTON BLUE ONLY
- - - - - - - PAGE 3 OF 5 - - - - - - -

Sub Menu	*Settings*	*Explanation*
USER CONFIG 3/4		
FUNCTION BUTTON SETUP		
-NEXT PAGE		
-F1 BUTTON	MARKER	F1- F6 button functions can be set as follows: • <MARKER>: Control all MARKER ON-OFF-ON • <AUD METER>: Control all audio meter display, ON-OFF-ON • <WAVEFORM>: OFF-WAVE-VECT75-VECT100-OFF • <H/V DELAY>: OFF-H-V-H/V-OFF • <AUTO ADJ>: Press to initial auto adjustment • <NATIVE>: [NATIVE]-OFF • <BLUE ONLY>: BLUE-NORMAL-BLUE • <MONO>: MONO-NORMAL-MONO • <UNDEF>: no settings
-F2 BUTTON	AUD METER	
-F3 BUTTON	H/V DELAY	
-F4 BUTTON	NATIVE	
-F5 BUTTON	AUTO ADJ	
-F6 BUTTON	BLUE ONLY	

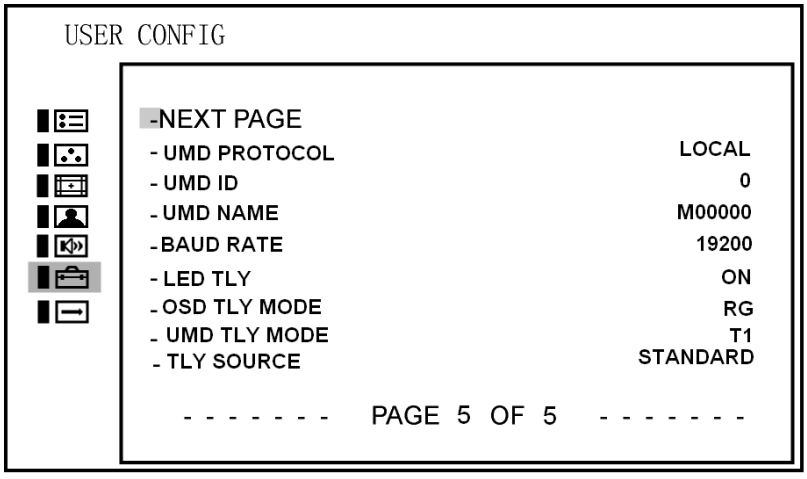
Press □(up)or □(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows.



Sub Menu	*Settings*	*Explanation*

USER CONFIG 4/4		
GPI SETUP		
-NEXT PAGE		
-GPI1	TALLY R	• <NONE> • <TALLY R> • <TALLY G> • <SDI 1> • <SDI 2> • <LINE 1> • <LINE 2> • <DVI-I> • <H/V DELAY> • <MONO> • <BLUE ONLY> • <NORMAL SCAN> • <OVER SCAN> • <NATIVE> • <ASPECT 4:3> • <ASPECT 16:9> • <MARKER ENABLE>
-GPI2	TALLY G	The same as above
-GPI3	SDI 1	The same as above
-GPI4	SDI 2	The same as above
-GPI5	LINE 1	The same as above
-GPI6	LINE 2	The same as above

Press □(up)or □(down) button to select “NEXT PAGE” item, then press Enter button to display the next page menu as follows. Select “NEXT PAGE” item in the following menu, it will return to display the first page menu of “USER CONFIG”.


USER CONFIG
-NEXT PAGE
- UMD PROTOCOL LOCAL
- UMD ID 0
- UMD NAME M00000
- BAUD RATE 19200
- LED TLY ON
- OSD TLY MODE RG
- UMD TLY MODE T1
- TLY SOURCE STANDARD
- - - - - - - PAGE 5 OF 5 - - - - - - -

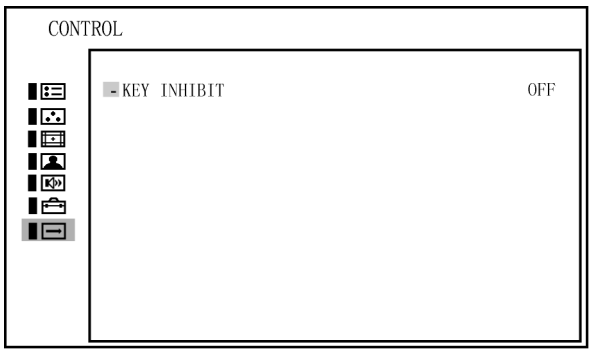
Sub Menu	Settings	Explanation

USER CONFIG 5/5		
-NEXT PAGE		
-UMD PROTOCAL	LOCAL	**LOCAL/TSL3.1/TSL4.0/IMAGE VIDEO** • **LOCAL:** Use UMD setting (USER CONFIG 2/5) to control the UMD. • **TSL3.1:** Use the TSLV3.1 protocol setting to control the UMD from a TSL tally controller. • **TSL4.0:** Use the TSLV4.0 protocol setting to control the UMD from a TSL tally controller. • **IMAGE VIDEO:** Use the Image video protocol setting to control the UMD from an Image Video tally controller (TSL-1510).
-UMD ID	0	**0 – 255** The UMD ID will determine which DISPLAY will be show.
-UMD NAME(S/N)	M00000	**16 Characters for Option** • Use this setting to assign a name to the Remote Display. • Press ENTER to edit the UMD name. • Use UP and DOWN to select characters. • Press ENTER to go to next cursor. Press MENU to exit editor.
-BAUD RATE	19200	**9600/19200/38400**
-LED TLY	OFF	**ON/OFF** Set the LED Tally ON or OFF.
-OSD TLY MODE	OFF	**RG/GR/RGY/OFF** Use this setting to choose OSD Tally Mode. Only the TALLY SOURCE is STANDARD or STANDARD+IV422 can make the setting be available.
-UMD TLY MODE	T1	**T1/T2/T1T2/T2T1/T1-/T2-/T1T2-/T2T1-** Use this setting when using the Image Video tally control. This setting will determine the state which is selected.
-TLY SOURCE	STANDARD	**STANDARD/IMAGE VIDEO HW/IMAGE VIDEO 422/STANDARD+IV422//TSL** • **STANDARD:** Use the Standard setting to control tally via contact closure on GPI tally. • **IMAGE VIDEO HW:** Use the Image Video HW setting to control Image Video tally states via contact closure on the GPI tally interface. Contact closure of the Red pin corresponds to the left Tally, and the Green pin maps to right Tally. Contact closure (ground) corresponds to a LOW state, and open circuit corresponds to a HIGH state. This mode requires to the UMD tally

		mode parameter to be set. • **IMAGE VIDEO 422:** Use the setting to control tally state via 422 port. GPI toggle is no available. • **STANDARD +IV422:** OSD and LED tally setting are the same as STANDARD and IMAGE VIDEO 422. This mode requires to the UMD tally mode parameter to be set. User can set the OSD tally level via 422 port. • **TSL:** Use the TSL 422 setting to control OSD and LED tally via the TSL serial protocol.

CONTROL

The CONTROL menu is used for setting the key inhibit function.



Sub Menu	*Settings*	*Explanation*
CONTROL		
-KEY INHIBIT	OFF/ON	Inhibit all keys except power, menu and volume keys

❖ *If the key inhibit has been turned on, the Inhibit lamp on the front panel always lights in orange. When you press any of the buttons except power, menu and volume, the prompt box will display on the screen as follows, and the other button functions are not valid. (Only if the Menu button is pressed,∧ (up), ∨(down) and Enter button will be valid.)*

❖ *The only menu setting can be changed when the key inhibit is engaged is the KEY INHIBIT ON/OFF item. To change any of the items, turn the key inhibit to OFF first.*

Chapter 7 Technical Specifications

7.1 Product Detailed Information:

Display Area	17” diagonal (14.46 X 9.04”, 367.2 X 229.5mm)
Viewing Angles	140 degree (H) X 120 degree (V)
Color Depth	16.2M
Resolution	1920H X 1080V
Dot Pitch	0.191 X 0.191mm
Contrast Ratio	800 :1
Response Time	<8ms
Power	100～240 V AC，50/60Hz，40Wmax
Power Consumption	40W
Luminance, White	275cd/m^2
Back light	White LED
Back light life time（Hrs）	10，000
Operating Temperature	0° C to 50° C

7.2 Inputs

- HD-SDI Inputs with Loop-through
- 1 Video Input
- 1 Configurable Video, Y/C, YPbPr Input
- 1 Configurable HDMI, VGA, DVI Input
- 4 Channels Audio Input
- GPI Inputs on RJ45
- RS485 with Loop-through

7.3 Component Level Definition

BETA 7.5		**SMPTE**	
Setup	53.37 mV	Setup	0 mV
Y	714.29 mV (Peak Luma, 100% White)	Y	700.00 mV (Peak Luma, 100% White)
Pb/Pr	700.00 mVp-p (75% Color Bars) 933.34 mVp-p (100% Color Bars)	Pb/Pr	525.00 mVp-p (75% Color Bars) 700.00 mVp-p (100% Color Bars)
Sync	-286 mV	Sync	-300 mV
BETA 0			
Setup	0 mV		
Y	714.30 mV (Peak Luma, 100% White)		
Pb/Pr	756.80 mVp-p (75% Color Bars) 1009.0 mVp-p (100% Color Bars)		
Sync	-286 mV		

7.4 Standard Definition Video, Frame Refresh Rate and Color Matrix (1920×1080)

Tab.1

	OVERSCAN		NATIVE	
	INPUT	OUTPUT	INPUT	OUTPUT
NTSC	684X462	1920X1080, 1600X1080	720X487	720X487
PAL	684X548	1920X1080, 1600X1080	720X576	720X576
SECAM	684X548	1920X1080, 1600X10800	720X576	720X576
NTCS-4.43	684X462	1920X1080, 1600X1080	720X487	720X487
PAL-M	684X462	1920X1080, 1600X1080	720X487	720X487
480I60	684X462	1920X1080, 1600X1080	720X487	720X487
576I50	684X548	1920X1080, 1600X1080	720X576	720X576
480P60	684X462	1920X1080, 1600X1080	720X487	720X487
576P50	684X548	1920X1080, 1600X1080	720X576	720X576
720P24	1216X684	1920X1080,	1280x720	1280x720
720P25	1216X684	1920X1080,	1280x720	1280x720
720P30	1216X684	1920X1080,	1280x720	1280x720
720P50	1216X684	1920X1080,	1280x720	1280x720
720P60	1216X684	1920X1080,	1280x720	1280x720
1035I60	1824X984	1920X1080,	1920X1035	1920X1035
1080I60	1824X1026	1920X1080,	1920X1080	1920X1080
1080I50	1824X1026	1920X1080,	1920X1080	1920X1080
1080P24	1824X1026	1920X1080,	1920X1080	1920X1080
1080P25	1824X1026	1920X1080,	1920X1080	1920X1080
1080P30	1824X1026	1920X1080,	1920X1080	1920X1080
1080P50	1824X1026	1920X1080,	1920X1080	1920X1080
1080P60	1824X1026	1920X1080,	1920X1080	1920X1080
1080SF24	1824X1026	1920X1080,	1920X1080	1920X1080
VGA				
SVGA				
XGA				
SXGA				
UXGA				
WVGA				
WXGA				
WUXGA				

**Don't display MARKER when SCAN is NATIVE*

Tab.2

	FULL NORMAL		Frame Rate	Color Matrix
	INPUT ALL	OUTPUT NORMAL		
NTSC	720X487	1920X1080 1920X1080(16:9), 1600X1080(4:3)	60	NTSC
PAL	720X576	1920X1080, 1600X1080	50	PAL
SECAM	720X576	1920X1080, 1600X1080	50	SECAM
NTCS-4.43	720X487	1920X1080, 1600X1080	60	NTCS-4.43
PAL-M	720X487	1920X1080, 1600X1080	60	PAL-M
480I60	720X487	1920X1080, 1600X1080	60	480I60
576I50	720X576	1920X1080, 1600X1080	50	576I50
480P60	720X487	1920X1080, 1600X1080	60	480P60
576P50	720X576	1920X1080, 1600X1080	50	576P50
720P24	1280x720	1920X1080,	48	720P24
720P25	1280x720	1920X1080,	50	720P25
720P30	1280x720	1920X1080,	30	720P30
720P50	1280x720	1920X1080,	50	720P50
720P60	1280x720	1920X1080,	60	720P60
1035I60	1920X1035	1920X1080,	60	1035I60
1080I60	1920X1080	1920X1080,	60	1080I60
1080I50	1920X1080	1920X1080,	50	1080I50
1080P24	1920X1080	1920X1080,	48	1080P24
1080P25	1920X1080	1920X1080,	50	1080P25
1080P30	1920X1080	1920X1080,	60	1080P30
1080P50	1920X1080	1920X1080,	50	1080P50
1080P60	1920X1080	1920X1080,	60	1080P60
1080SF24	1920X1080	1920X1080,	48	1080SF24
VGA	640X480	1920x1080	60-75	VGA
SVGA	800X600	1920x1080	60-75	SVGA
XGA	1024x768	1920x1080	60-75	XGA
SXGA	1280x1024	1920x1080	60-75	SXGA
UXGA	1600x1080	1920x1080	60	UXGA
WVGA	800x480	1920x1080	60	WVGA
WXGA	1280x768	1920x1080	60	WXGA
WUXGA	1920x1080	1920x1080	60	WUXGA

Chapter 8 Supplied Accessories

Standard accessories:

1. Display 1
2. AC Power Cord 1
3. M4 x 8mm Screws 5
4. Warranty Card 1
5. Table Stand 1
6. User Manual 1

Optional accesories:

1. Rack Mount Ears. 2 pcs/set
2. M4 x 6mm Screws 4

Note：Specifications are subject to change without notice.